

## CLAIMS

New claims:

1 16. A method for a post-treatment of exhaust gas produced by  
2 an internal combustion engine in a motor vehicle, comprising the steps of  
3 obtaining hydrogen by a hydrolysis unit connected to a water tank; delivering  
4 a metered addition of the hydrogen to an exhaust gas as a function of a  
5 demand for hydrogen occurring at certain operating states and/or functions  
6 of a catalytic converter; performing the delivery of the hydrogen in a direction  
7 of flow of the exhaust gas at a location selected from the group consisting of  
8 between an oxidation catalytic converter and (an Nox) storage catalytic  
converter, upstream of the oxidation catalytic converter and upstream of the  
NOx storage catalytic converter, and upstream of the oxidation catalytic  
converter and a particle filter of an exhaust-gas line.

17. A method as defined in claim 16; and further comprising  
producing a quantity of hydrogen required in each case on demand in the  
hydrolysis unit; and making available directly for metering.

18. A method as defined in claim 17; and further comprising providing a hydrogen tank that stores a certain quantity of the hydrogen produced by a hydrolysis unit.

19. A method as defined in claim 18; and further comprising dimensioning a quantity of hydrogen in the tank so that it suffices to heat and regenerate the NOx storage catalytic converter.

20. A method as defined in claim 16; and further comprising registering a temperature of the exhaust gas and certain operating states of the catalytic converters.

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21. A method as defined in claim 16; and further comprising providing regeneration phases in the NOx storage catalytic converter including adding hydrogen to an untreated exhaust gas at certain intervals and in a quantity required in each case.

22. A method as defined in claim 16; and further comprising for the internal combustion engine formed as a diesel engine, activating an addition of hydrogen to the exhaust gas when hydrocarbon can not be produced using internal processes.

23. A method as defined in claim 16; and further comprising for the internal combustion engine formed as a gasoline engine, initiating an additional hydrogen to the exhaust gas when an engine operating point at a moment does not allow hydrocarbons to be made available using internal processes at a sufficient temperature.

24. A method as defined in claim 16; and further comprising regenerating oxidation stages of the storage catalytic converter or the particle filter by means of hydrogen reduction, to restore a sufficient conversion rate after sulphur poisoning, at oxidation stages at the NOx storage catalytic converter or the particle filter.

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25. A method as defined in claim 24; and further comprising activating the regeneration after a decrease in a conversion rate of the NOx storage catalytic converter or the particle filter is registered.

26. A method as defined in claim 16; and further comprising raising an exhaust-gas temperature in order to guarantee that regeneration conditions are met when the particle filter is employed while the engine operates under low-load condition and temperatures therefore is a crucial factor.

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27. An apparatus for a post-treatment of an exhaust gas of an internal combustion engine in a motor vehicle, comprising a hydrolysis unit, a metering device connected to said hydrolysis unit via a hydrogen line for a metered addition of hydrogen to an exhaust gas; and a control/regulating unit that is functionally connected to said hydrolysis unit and said metering device in order to control or regulate a production of hydrogen in said hydrolysis unit and said metering device as a function of certain operating states of the internal combustion engine and registered parameters of an exhaust-gas system; and additional points at which hydrogen is added to the exhaust gas, provided in a direction of flow of the exhaust gas at a location selected from the group consisting of upstream of an oxidation catalytic converter, between the oxidation catalytic converter and an NOx storage catalytic converter, and upstream of the oxidation catalytic converter and a particle filter.

28. An apparatus as defined in claim 27, wherein said metering device is formed as a metering and shutoff valve.

29. An apparatus as defined in claim 27; and further comprising a hydrogen intermediate storage tank connected downstream of said hydrolysis unit in order to store a certain quantity of hydrogen.

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30. An apparatus as defined in claim 27, wherein said control/regulating unit comprises a catalytic converter monitoring function that is functionally connected to an exhaust-gas sensor system.

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